

use in plants include ribulose-1,3-biphosphate carboxylase small subunit promoter, phaseolin promoter, etc.

[0167] Exemplary viral promoters which function constitutively in eukaryotic cells include, for example, promoters from the simian virus, papilloma virus, adenovirus, human immunodeficiency virus (HIV), Rous sarcoma virus, cytomegalovirus, the long terminal repeats (LTR) of Moloney leukemia virus and other retroviruses, and the thymidine kinase promoter of herpes simplex virus. Other constitutive promoters are known to those of ordinary skill in the art. The promoters useful as gene expression sequences of the invention also include inducible promoters. Inducible promoters are expressed in the presence of an inducing agent. For example, the metallothionein promoter is induced to promote transcription and translation in the presence of certain metal ions. Other inducible promoters are known to those of ordinary skill in the art.

[0168] Thus, a variety of promoters and regulatory elements may be used in the expression vectors of the present invention. For example, in some preferred embodiments an inducible promoter is used to allow control of nucleic acid expression through the presentation of external stimuli (e.g., environmentally inducible promoters). Thus, the timing and amount of nucleic acid expression may be controlled. Non-limiting examples of expression systems, promoters, inducible promoters, environmentally inducible promoters, and enhancers are described in International Patent Application Publications WO 00/12714, WO 00/11175, WO 00/12713, WO 00/03012, WO 00/03017, WO 00/01832, WO 99/50428, WO 99/46976 and U.S. Pat. Nos. 6,028,250, 5,959,176, 5,907,086, 5,898,096, 5,824,857, 5,744,334, 5,689,044, and 5,612,472 each of which is herein incorporated by reference in its entirety.

[0169] As used herein, an "expression element" can be any regulatory nucleotide sequence, such as a promoter sequence or promoter-enhancer combination, which facilitates the efficient expression of the nucleic acid. The expression element may, for example, be a mammalian or viral promoter, such as a constitutive or inducible promoter. Constitutive mammalian promoters include, but are not limited to, polymerase promoters as well as the promoters for the following genes: hypoxanthine phosphoribosyl transferase (HPTR), adenosine deaminase, pyruvate kinase, and alpha-actin. Exemplary viral promoters which function constitutively in eukaryotic cells include, for example, promoters from the simian virus, papilloma virus, adenovirus, human immunodeficiency virus (HIV), Rous sarcoma virus, cytomegalovirus, the long terminal repeats (LTR) of Moloney leukemia virus and other retroviruses, and the thymidine kinase promoter of herpes simplex virus. Other constitutive promoters are known to those of ordinary skill in the art. Promoters useful as expression elements of the invention also include inducible promoters. Inducible promoters are expressed in the presence of an inducing agent. For example, a metallothionein promoter can be induced to promote transcription in the presence of certain metal ions. Other inducible promoters are known to those of ordinary skill in the art. The *in vivo* expression element can include, as necessary, 5' non-transcribing and 5' non-translating sequences involved with the initiation of transcription, and can optionally include enhancer sequences or upstream activator sequences.

[0170] Using any gene transfer technique, such as the above-listed techniques, an expression vector harboring the nucleic acid may be transformed into a cell to achieve tem-

porary or prolonged expression. Any suitable expression system may be used, so long as it is capable of undergoing transformation and expressing of the precursor nucleic acid in the cell. In one embodiment, a pET vector (Novagen, Madison, Wis.), or a pBI vector (Clontech, Palo Alto, Calif.) is used as the expression vector. In some embodiments an expression vector further encoding a green fluorescent protein (GFP) is used to allow simple selection of transfected cells and to monitor expression levels. Non-limiting examples of such vectors include Clontech's "Living Colors Vectors" pEYFP and pEYFP-C1.

[0171] In some cases, a selectable marker may be included with the nucleic acid being delivered. As used herein, the term "selectable marker" refers to the use of a gene that encodes an enzymatic or other detectable activity (e.g., luminescence or fluorescence) that confers the ability to grow in medium lacking what would otherwise be an essential nutrient. A selectable marker may also confer resistance to an antibiotic or drug upon the cell in which the selectable marker is expressed. Selectable markers may be "dominant" in some cases; a dominant selectable marker encodes an enzymatic or other activity (e.g., luminescence or fluorescence) that can be detected in any cell or cell line.

[0172] In one aspect, the present invention is directed to a kit. The kit may, for instance, include one or more antigen-presenting cells or other cells able to express a species. For instance, the kit may be shipped to a user. A "kit," as used herein, typically defines a package or an assembly including one or more of the compositions of the invention, and/or other compositions associated with the invention, for example, as previously described. Each of the compositions of the kit may be provided in liquid form (e.g., in solution), or in solid form (e.g., a dried powder). In certain cases, some of the compositions may be constitutable or otherwise processable (e.g., to an active form), for example, by the addition of a suitable solvent or other species, which may or may not be provided with the kit. Examples of other compositions or components associated with the invention include, but are not limited to, solvents, surfactants, diluents, salts, buffers, emulsifiers, chelating agents, fillers, antioxidants, binding agents, bulking agents, preservatives, drying agents, antimicrobials, needles, syringes, packaging materials, tubes, bottles, flasks, beakers, dishes, frits, filters, rings, clamps, wraps, patches, containers, and the like, for example, for using, administering, modifying, assembling, storing, packaging, preparing, mixing, diluting, and/or preserving the compositions components for a particular use, for example, to a sample and/or a subject.

[0173] A kit of the invention may, in some cases, include instructions in any form that are provided in connection with the compositions of the invention in such a manner that one of ordinary skill in the art would recognize that the instructions are to be associated with the compositions of the invention. For instance, the instructions may include instructions for the use, modification, mixing, diluting, preserving, administering, assembly, storage, packaging, and/or preparation of the compositions and/or other compositions associated with the kit. In some cases, the instructions may also include instructions for the delivery and/or administration of the compositions, for example, for a particular use, e.g., to a sample and/or a subject. The instructions may be provided in any form recognizable by one of ordinary skill in the art as a suitable vehicle for containing such instructions, for example, written or published, verbal, audible (e.g., telephonic), digital, opti-